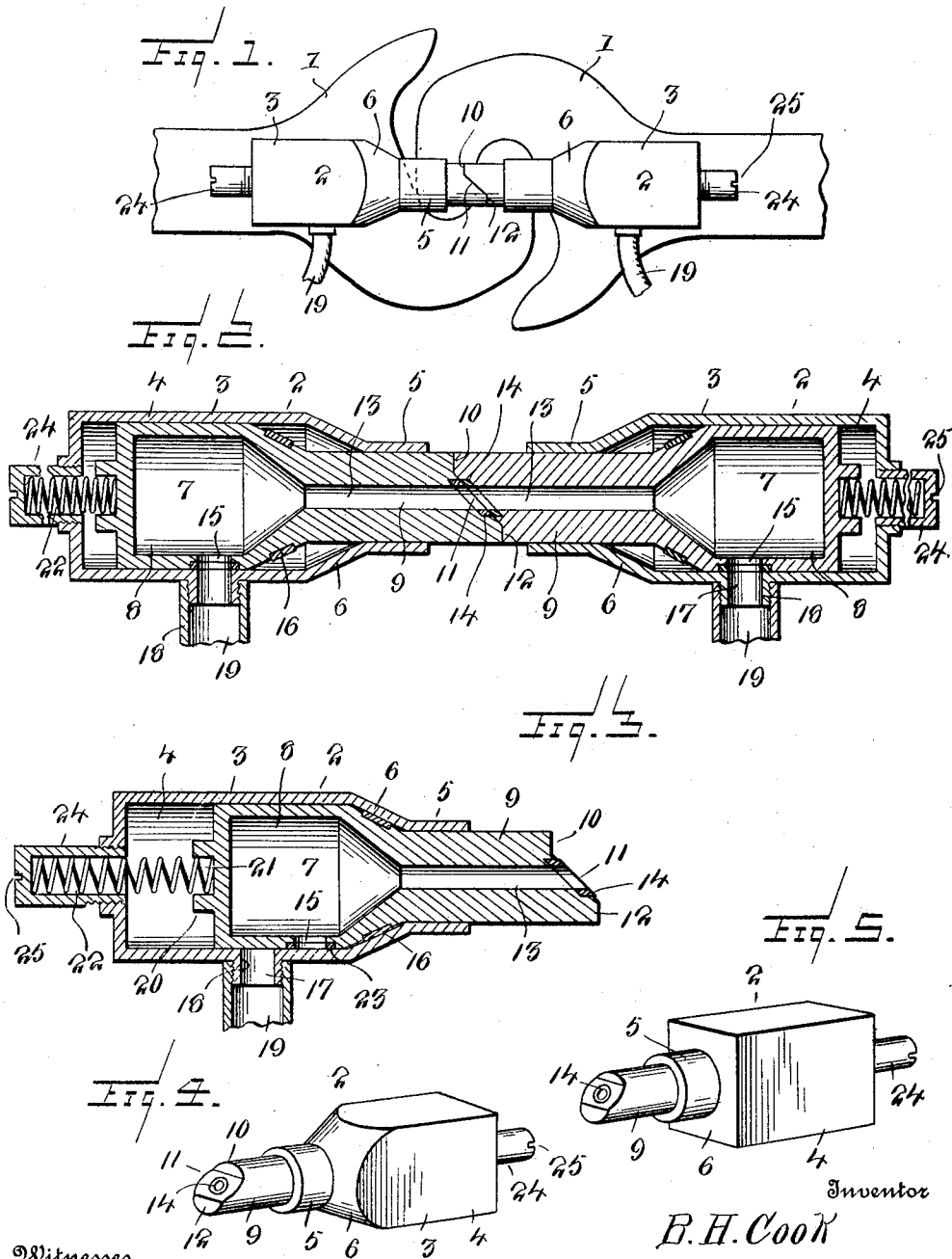


B. H. COOK.
COUPLING DEVICE.
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1,107,041.

Patented Aug. 11, 1914.



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BENJAMIN H. COOK, OF ANDERSON, INDIANA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENJAMIN H. COOK, a citizen of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented new and useful Improvements in Coupling Devices, of which the following is a specification.

The present invention relates to air pipe couplings and pneumatic brake systems and the like, and the primary object of the invention is the provision in a device of this character of means whereby the coupling members will be automatically connected when the cars are brought to a coupling position, so that the necessity of a person entering between the cars for this purpose is entirely overcome.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claim.

In the drawing: Figure 1 is a top plan view illustrating my improvements in connection with the coupled draw heads of two cars, Fig. 2 is a longitudinal sectional view through the improvement, Fig. 3 is a similar sectional view illustrating the position of the parts of one of my improved couplers when the same is not in co-acting position with the second coupler, Fig. 4 is a detail perspective view of one of my improved couplers, and Fig. 5 is a view of a coupler member provided with a rectangular body.

In the preferred form of the device my improved coupler is either integrally formed with the draw head of a car or is connected thereto in any desired or suitable manner, as for instance, when the coupler is constructed as a separate member, the draw head may be provided with suitable threaded openings and straps may be arranged upon the outer shell of the coupler which have their ends formed with openings that register with threaded openings in the draw head, and passing through these openings are securing bolts.

Referring now to the drawings in detail, the numerals 1—1 designate two co-acting draw heads of ordinary car couplers, which are provided with air brake couplers, constructed in accordance with my invention, and which are indicated by the numerals 2. Each of the couplers 2 is of a similar construction, and each embodies an outer shell 3. The shell comprises an enlarged tube or

chamber 4 and a reduced co-axially extending tube or chamber 5. The connecting wall or member 6, between the chambers 4 and 5, is preferably inclined, as illustrated in the drawings. Arranged for longitudinal movement within the shell 3 is a sliding valve 7. This valve comprises an enlarged or body portion 8 which is adapted to be snugly received within the enlarged chamber 4 of the shell 3, and a reduced portion or stem 9 which is received within the reduced extension 5 of the shell 3. The stem 9 is adapted to project through the open end of the tubular portion 5 of the shell 3. The projecting end or face of the valve is of a peculiar construction, the same embodying an outer wall or end which is designated by the numeral 10, a beveled inclined wall 11 which terminates in a shoulder 12. The passage 13 of the valve communicates with the wall 11 and is surrounded by a compressible washer 14. It is to be understood that the end 12 of the stem of one of the valves contacts with the shoulder 11 of the co-acting valve, while the inclined walls 11 of the said stems are brought into engagement when the valves are coupled, and also the compressible gaskets are adapted to engage with sufficient friction to prevent the escape of air from between the ends or mouths of the stems of the valves. The passage 13 communicates with an enlarged opening provided in the portion 8 of the valve, and the enlargement of the passage is provided with a port 15. The chamber 4 is preferably rectangular in cross section, but its reduced extension 5 is tubi-form, and the enlarged portion 8 of the barrel is rectangular in cross section, while its reduced portion 9 is tubi-form. By such an arrangement, it will be noted that the valve is prevented from rotation within the shell 3, and the shoulder or connecting member 6 of the shell is provided with a gasket or washer 16 which is adapted to be contacted by the shoulder provided between the members 8 and 9 of the sliding valve 7.

The face of the chamber 4 over which the port 15 of the valve is arranged has, at a point remote from the valve, when the said valve is in its forward position, an inlet 17 which is preferably surrounded by a threaded boss 18, to which is connected the flexible fluid pipe 19. The inner and solid end of the valve is centrally formed with an extending boss or lug 20, the

said lug being centrally formed with a depression 21 for the reception of a spring 22, and the said spring exerts a tension between the inner closed wall of the shell and the valve to normally force the port 15 out of registration with the port 17 and the shoulder of the valve into abutment with the compressible gasket 16. The port 15 may be, and preferably is, surrounded by a gasket or washer 23, and the rear wall of the enlarged chamber of the shell 3 is preferably formed with a threaded opening for the reception of a hollow cap 24. This cap has its free end provided with a transverse opening 25, for the reception of a screw driver or the like, whereby the cap may be moved longitudinally with relation to the shell 3, the hollow and inner portion of the cap being adapted to receive the free end of the spring 22, and the said cap being elongated to provide for the regulation of the tension of the spring.

As previously stated, the device is either integrally connected with or secured to the draw bar of the train couplers, so it will be apparent that when the said draw heads are brought to a coupling position, the faces of the sliding valve will be forced into contacting engagement, and as a consequence, to movement rearwardly and longitudinally of the shells 8, so that their ports 15 will be brought into registration with the ports 17, and be sustained in said register as long as the draw heads are coupled. It will be further understood that by securing the couplings to or having the couplers integrally formed with the draw heads, the said couplers will be permitted all movements in any direction to which the draw heads may be placed.

In Fig. 5 I have illustrated a coupler having a rectangular body when the beveled or inclined connection between the body proper and the extension 5 is dispensed with, and also wherein a valve having a rectangular body may be provided.

From the above description, taken in con-

nection with the accompanying drawing, the improvement resides in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claim.

Having thus described the invention, what I claim is:

The combination with the draw head of a car, of an air coupler connected with the draw head, said coupler including a rectangular chamber having a reduced tubular extension, a valve, said valve including a hollow rectangular body which is arranged within the rectangular chamber of the coupler, the valve having a cross sectionally rounded stem which is also arranged within the chamber and which projects through the tubular extension of the chamber, the said stem having a port which communicates with the hollow body of the valve, the stem having its outer face centrally formed with an angular wall, which terminates in a shoulder disposed inwardly of its end, a compressible gasket arranged upon the angular wall and surrounding the port of the valve stem, a gasket between the stem and body of the valve, the body of the valve having a port, a coupler having an air inlet port arranged to register with the port of the valve, the chamber of the coupler having a threaded opening disposed opposite its tubular extension, a threaded socket member normally closing the opening, a spring within the socket and bearing against the inner face of the valve, and the said spring adapted to normally slide the valve to bring its port out of register with the port of the coupling and to force its gasket into contact with the wall of the coupler between the rectangular body and tubular extension thereof.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN H. COOK.

Witnesses:

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RALPH WILLIAM COOK.